

# PATENT ABSTRACTS OF JAPAN

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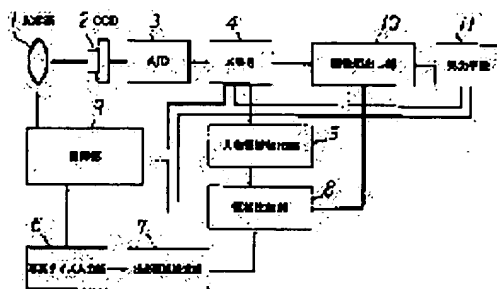
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## (54) IMAGE PHOTOGRAPHING DEVICE FOR CERTIFICATION PHOTOGRAPH

### (57)Abstract:

**PURPOSE:** To provide an image photographing device for various-sized certification photograph, capable of automatically magnifying, reducing and moving the image so that a human image is the size appropriate to the size of the certification photograph.

**CONSTITUTION:** An area comparison part 8 conducts comparison from the size of the certification photograph which is previously inputted from a photograph size input part 6 and the size of a human area extracted from the solid-state image pickup element 2 of CCD by processing picture data stored in a memory 4 in a human area extraction part 5. The picture is enlarged and reduced until the result becomes a value less than a threshold which is set so as to set the size of a screen frame and an area where the human image is to be projected. When the human area becomes the appropriate size, an image segment part 10 segments a necessary part and transmits it to an output means 11. The image is outputted and the necessary number of the necessary printed photographs for certification is obtained.



## LEGAL STATUS

[Date of request for examination]

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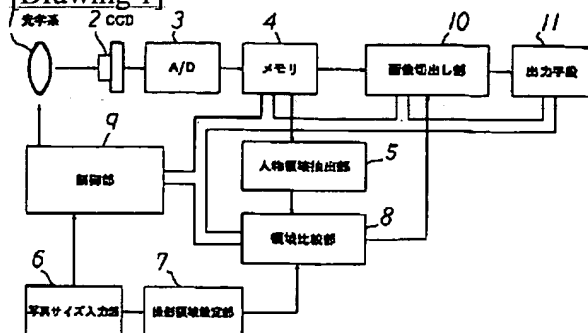
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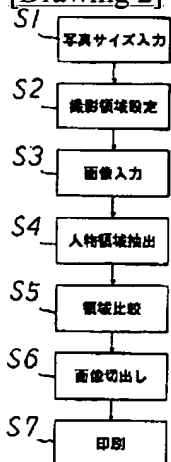
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## DRAWINGS

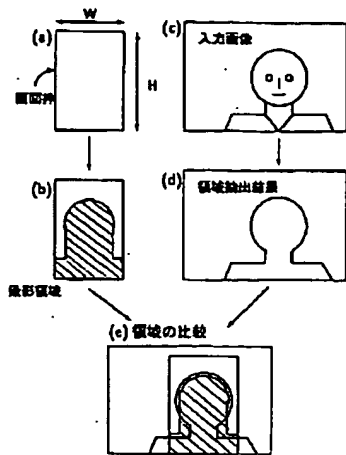
[Drawing 1]



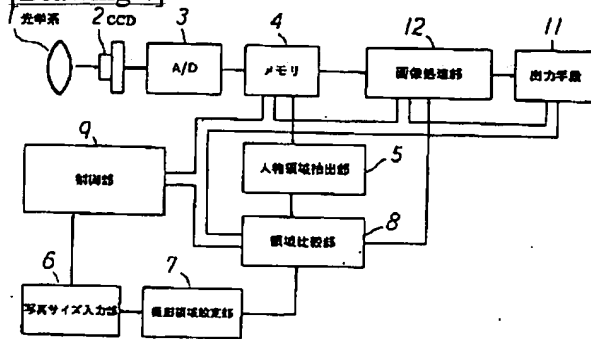
[Drawing 2]



[Drawing 3]



[Drawing 4]



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## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the picture photography equipment for proof photographs which can adjust the size of a person image to a suitable size automatically according to the size of a proof photograph, when taking the proof photograph of various sizes.

[0002]

[Description of the Prior Art] A photograph is taken using a silver salt film and an instant film as a means to take the photograph of his face for proof stuck on various documents, a license, an identification certificate, etc., and, generally the proof photography equipment which carries out development, baking, cutting processing, etc. and offers a predetermined photograph is used. Moreover, even if it changes a screen size and a photography scale factor, the proof photography equipment into which a proof photograph is changed in size is indicated by carrying out image formation of the two photographic subject images by the taking lens of a couple in each center of a screen (JP,4-62531,A).

[0003]

[Problem(s) to be Solved by the Invention] Although above proof photography equipment can take a proof photograph easily, since the camera is being fixed, in order to store a photograph of his face within the screen-limit, according to a camera, the person taken a photograph needs to change a position and a posture.

[0004] Moreover, depending on the size of a proof photograph, to photograph size, the portion of a face was too large, and it is too small, and is unsuitable as a proof photograph, and there was a trouble which appearance says is bad.

[0005] Furthermore, in JP,4-62531,A, selection exchange of the lens unit corresponding to photograph size had to be carried out, equipment also became expensive, and operation was also complicated. And it was difficult for the camera of the special specification which consists of 4 eye lens to be needed in order to acquire two or more proof photographs simultaneously, and to deal with various photograph sizes.

[0006] The purpose of this invention is to offer the picture photography equipment for proof photographs which performs enlarging or contracting, movement, etc. of a picture automatically so that the above-mentioned fault solves and a person image may serve as a suitable size from the size of the proof photograph which is photography equipment of the proof photograph of various sizes, and is inputted beforehand, and the size of the person field extracted from the picture inputted from solid state image pickup devices, such as CCD, to the size of a proof photograph.

[0007]

[Means for Solving the Problem] A photograph size input means to use an electronic still camera and to input the size of the proof photograph to need into a person's photography in order to attain the aforementioned purpose in this invention, A photography field setting means to set up the field where a person image is photoed to the photograph size inputted with the aforementioned photograph size input means, An A/D-conversion means to change into a digital image signal the analog picture signal

acquired by the image pick-up element through optical system, A memory means to memorize the aforementioned digital image signal, and a person field extraction means to extract the field of a person image from the read aforementioned digital image signal, A field comparison means to compare the size of the field set up with the aforementioned photography field setting means, and the field extracted with the aforementioned person field extraction means, It consists of an adjustment means to adjust the size of the person image photoed based on the comparison result of the aforementioned field comparison means, and an output means to output in the size into which the photoed digital image signal was inputted with the aforementioned photograph size input means.

[0008]

[Function] According to the aforementioned composition, according to the size of the specified proof photograph, the photograph for proof which is a suitable size and has been arranged in the person image in the suitable position is acquired the arbitrary numbers of sheets.

[0009]

[Example] Hereafter, the example of this invention is explained with reference to a drawing.

[0010] Drawing 1 is the block diagram showing the 1st whole example composition by this invention. Incidence image formation of the light from a photographic subject is carried out to the solid state image pickup devices 2, such as CCD, through optical system 1. A solid state image pickup device 2 changes into an electrical signal (picture signal) the picture which carried out image formation, and supplies this to A/D converter 3. A/D converter 3 changes the analog signal supplied into a digital signal one by one, and memorizes it in memory 4. Since a solid state image pickup device 2 outputs one screen of image data at a time, the image data for one screen is memorized by memory 4.

[0011] The person field extraction section 5 is connected to memory 4, and this person field extraction section 5 processes the image data memorized by memory 4, and extracts the field where the person image in image data is photoed.

[0012] On the other hand, in the photograph size input section 6, the size of a proof photograph required before photography is inputted, and the field where the size and person image of a screen frame should be copied is set up in the continuing photography field setting section 7 from the information on the photograph size sent from the photograph size input section 6.

[0013] In the field comparator 8, the size of the field extracted in the person field extraction section 5 and the field for which it asked in the photography field setting section 7 is compared (for example, it asks for difference etc.), optical system 1 is adjusted through a control section 9 until it becomes below the threshold that the result set up, and expansion and reduction of a picture are performed.

[0014] If a person field becomes a suitable size, a portion required of the picture logging section 10 next will be started, it will send to the output means 11, a picture will be outputted, and the required print photograph for proof will be acquired the number of need sheets.

[0015] Drawing 2 is a flow chart which shows the flow of processing with the picture photography equipment for proof photographs of this invention. Moreover, drawing 3 is explanatory drawing which expressed a setup of a photography field, and the state of comparison of a field along with the aforementioned flow chart. Hereafter, the flow of processing by this invention is explained drawing 2 and based on 3.

[0016] The photography field where the size and person image of (Step S1) and a screen frame should be copied from the size ( drawing 3 (a)) of the photograph first inputted from the photograph size input section 6 is set up (Step S2). ( drawing 3 (b)) Next, to the input picture ( drawing 3 (c)) which is incorporated from CCD and memorized by memory 4 (Step S3), the difference in the color of an object and a background and the difference of brightness are used, a binary picture is created, from this, separation extraction of a background and the person image is carried out ( drawing 3 (d)), and a person field is extracted in the person field extraction section 5 (step S4).

[0017] Pattern matching is performed between the patterns ( drawing 3 (b)) which set up the background, the picture ( drawing 3 (d)) which separated the person image, and the photography field in the person field extraction section 5, difference is taken most in the high place of the degree of coincidence, and the size of two fields is compared ( drawing 3 (e)). Based on this comparison result, by

the control section 9, the lens of optical system 1 is adjusted and expansion and reduction of a picture are performed (Step S5).

[0018] If a person field becomes a suitable size, a field required of the picture logging section 10 next will be started, it will send to the output (Step S6) means 11, and a picture will be outputted as a proof photograph (Step S7).

[0019] Drawing 4 is the block diagram showing the composition of the 2nd example of this invention. Here, the same sign is given to the same composition means as the 1st example. Drive of optical system 1 and control are not performed at the time of enlarging or contracting of a picture, but geometrical conversion of affine transformation etc. is performed to image data in the following image-processing section 12 based on the comparison result of the field from the field comparator 8, and it constitutes from the 2nd example so that a picture may be expanded or reduced to required size and it may send to the output means 11.

[0020]

[Effect of the Invention] The good photograph for proof of the appearance which is a suitable size and has been arranged in the person image in the suitable position according to the size of the specified proof photograph is acquired the number of need sheets automatically.

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